REMARKS

Summary of the Office Action

In the Office Action, claim 20 has been objected to for a minor informality.

Claim 18 has been rejected under 35 USC 112, 2nd Paragraph, as being indefinite.

Claims 20-22 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 3,770,292 to *Palazzetti*, U.S. Patent No. 6,293,530 to *Delorenzis* and U.S. Patent No. 6,293,561 to *Goetzen*, further in view of 6,029,764 to *Schubert.*

Claims 1, 3, 4 and 6-18 have been allowed.

Summary of the Response to the Office Action

Applicant proposes amending Claims 18 and 20 to address the objection and 35 USC 112, 2nd Paragraph rejection, and adding new claims 25 and 26. Rejected claims 20-22 are believed to be patentable for the reasons presented below (claims 1, 3, 4 and 6-18 being allowed).

All Claims are Allowable

In the Office Action, claims 20-22 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 3,770,292 to *Palazzetti*, U.S. Patent No. 6,293,530 to *Delorenzis* and U.S. Patent No. 6,293,561 to *Goetzen*, further in view of 6,029,764 to *Schubert.*

Applicant respectfully traverses this rejection for the following reasons.

With regard to independent claim 20, Applicant respectfully asserts that *Palazzetti*, *Delorenzis*, *Goetzen*, and *Schubert,* whether viewed singly or in combination, do not teach or suggest, or can be combined to disclose, *inter alia*, an apparatus for

simulating a coil spring on a suspension system in terms of derived torque and force characteristics of the spring, including, "a six degree of freedom force field generator for simulating the spring, said force field generator secured in the suspension system, and means for activating the force field generator to produce forces therein for characterizing six degree of freedom spring reaction forces, wherein the force field generator comprises: a damper including a housing and a telescopic strut, the strut being axially movable between respective fully extended and fully compressed positions; a first support secured to the housing and second support secured to the strut for relative movement in the extended and compressed positions; a plurality of hydraulic cylinders secured between the first and second supports, said hydraulic cylinders being actuable for exerting a force between the first and second supports."

Support for these features recited in claim 20 can be found at least in paragraphs 10-12 and 22-37 of the Published Application, and in Figs. 2-4b of the originally filed drawings. Specifically, as shown in Figs. 2-4b, the present invention provides an apparatus for simulating a coil spring on a suspension system 40 in terms of derived torque and force characteristics of the spring. The apparatus includes a six degree of freedom force field generator 42 for simulating the spring. The force field generator is secured in the suspension system. The apparatus further includes means for activating the force field generator to produce forces therein for characterizing six degree of freedom spring reaction forces.

The Official Action cites *Palazzetti*, *Delorenzis*, *Goetzen*, and *Schubert* as teaching or suggesting the apparatus as recited in independent claim 20.

Palazzetti, as illustrated in Figs. 1 and 2 thereof, discloses a system for simulating or mimicking a suspension spring force characteristics. Further, *Delorenzis*, as noted in the Official Action appears to disclose a system for spring force characterization.

Contrary to the present invention as recited in independent claim 20, the systems of *Palazzetti* and *Delorenzis* however differ from that of the present invention in several key and patentably distinct respects. For example, the systems of *Palazzetti* and *Delorenzis* are axial in nature, in that they do not have the ability to generate/simulate a true coil spring's lateral forces and torques applied to the spring seats. More importantly, the systems of *Palazzetti* and *Delorenzis* are of an entire suspension system, whereas the present invention as recited in claim 20 is directed to a coil spring and the ability to simulate and model the spring itself to better understand a required spring design requirement/specification for already common suspensions. Moreover, whereas the present invention, as indicated above, is directed to a coil spring and deriving spring design specification requirements, the inventions of *Palazzetti* and *Delorenzis* actually substitute a liquid/hydropneumatic spring mechanism for a coil spring in an active suspension and gain no benefit toward a coil spring application in a traditional suspension (non-active).

Thus contrary to the recitation in independent claim 20 of "a six degree of freedom force field generator for simulating the spring ... characterizing six degree of freedom spring reaction forces," the mechanisms of *Palazzetti* and *Delorenzis* are only single line of action mechanisms and do not have the six degree of freedom reactions that a coil spring has. Therefore, the mechanisms of *Palazzetti* and *Delorenzis* cannot be used for deriving a spring design specification or help with the investigation of various suspension characteristics based on the use of liquid or hydropneumatic springs as taught therein.

Goetzen and *Schubert* have been cited as disclosing six-degree of freedom force field generators, with their systems controlling the wheel position in six degrees of freedom using multiple hydraulic cylinders. However, the *Goetzen* and *Schubert* systems have nothing to do with coil spring design, but are simply a substitution of the

existing suspension system (similar to the *Palazzetti* and *Delorenzis* systems). The present invention apparatus is not a suspension system itself but a substitution of only a coil spring mounted on a strut suspension system. That is why the present invention apparatus is useful for checking the effect of six degrees of freedom coil spring reaction force on a damper, and determining ideal characteristics of a coil spring mounted on a strut suspension system. Accordingly, whereas the *Goetzen* and *Schubert* apparatus are entire suspension systems, the present invention apparatus is a device for determining coil spring specifications under a strut suspension system.

Thus with regard to independent claim 20, Applicant respectfully asserts that *Palazzetti*, *Delorenzis*, *Goetzen*, and *Schubert*, whether viewed singly or in combination, do not teach or suggest, or can be combined to disclose, *inter alia*, an apparatus for simulating a coil spring on a suspension system in terms of derived torque and force characteristics of the spring, including, "a six degree of freedom force field generator for simulating the spring, said force field generator secured in the suspension system, and means for activating the force field generator to produce forces therein for characterizing six degree of freedom spring reaction forces, wherein the force field generator comprises: a damper including a housing and a telescopic strut, the strut being axially movable between respective fully extended and fully compressed positions; a first support secured to the housing and second support secured to the strut for relative movement in the extended and compressed positions; a plurality of hydraulic cylinders secured between the first and second supports, said hydraulic cylinders being actuable for exerting a force between the first and second supports."

As pointed out in M.P.E.P. § 2143.03, "[t]o establish prima facie obviousness of a claimed invention, all the claimed limitations must be taught or suggested by the prior art". *In re Royka*, 409 F.2d 981, 180 USPQ 580 (CCPA 1974). Since this criterion has not been met, Applicant respectfully asserts that the rejection under 35 U.S.C. § 103 should

be withdrawn because *Palazzetti*, *Delorenzis*, *Goetzen*, and *Schubert* do not teach or suggest each feature of independent claim 20.

In view of the above arguments, Applicant respectfully requests the rejection of independent claim 20 under 35 U.S.C. § 103 be withdrawn. Additionally, claims 21 and 22, which depend from independent claim 20, are allowable at least because their base claim is allowable, as well as for the additional features recited therein.

CONCLUSION

In view of the foregoing, Applicant respectfully requests reconsideration and the timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of the response, the Examiner is invited to contact the Applicant's undersigned representative to expedite prosecution.

If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 04-2223. If a fee is required for an extension of time under 37 C.F.R. §1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

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